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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,923	06/13/2001	Mark D. Roberts	28549/165405	2854

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EXAMINER	
TRAN, KHANH C	
ART UNIT	**PAPER NUMBER**
2631	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/878,923	ROBERTS, MARK D.	
	Examiner	Art Unit	
	Khanh Tran	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,6-17,20,24-35,38-43 and 48-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2,6-17,20,24-35 and 53-58* is/are allowed.

6)☒ Claim(s) *38,40-43,59 and 61-64* is/are rejected.

7)☒ Claim(s) *39,48-52 and 60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment filed on 11/10/2004. Claims 2, 6-17, 20, 24-35, 38-43 and 48-64 are pending in this Office action.

Response to Arguments

2. Applicant's arguments, see pages 15-16, filed on 11/10/2004, with respect to the remaining claim(s) 2, 6-17, 20, 24-35, 38-43 and 48-49 have been fully considered and are persuasive. However, upon further consideration, a new ground(s) of rejection on the pending claims is made in view of Hoctor et al. U.S. Patent 6,810,087 B2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 38, 40-43, 59, 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoctor et al. U.S. Patent 6,810,087 B2.

Regarding claim 38, Hoctor et al. invention is directed to an ultra-wideband (UWB) communications system combining the techniques of a transmitted reference (TR) and a multiple access scheme called delay hopping (DH).

In column 4, lines 15-41, Hoctor et al. teaches a transmitted reference (TR) method describing the transmission of pairs of identical pulses, called doublets, separated by a time interval, D, known to both a receiver and transmitter. In column 2, lines 18-42, Hoctor et al. further teaches when two UWB TR signals are generated with different delay, it is possible to receive and demodulate both of them simultaneously, by applying two separate correlators to the same received signal. In light of that, different delays are inserted between UWB TR signals to support number of simultaneous users.

Hoctor et al. does not expressly teach the at least one time delay specified by at least one code element of at least one delay code. Nevertheless, the delay taught in Hoctor et al. corresponds to a special case, wherein the claimed delay code has one code element. In view of that, one of ordinary skill in the art would have recognized that the delay taught in Hoctor et al. corresponds to the claimed delay code.

Regarding claim 40, in column 2, lines 15-55, Hoctor et al. teaches when two UWB TR signals are generated with different delays, to receive and demodulate both of them simultaneously. In view of that, different delays, each associated with a separate transmitter, are inserted between UWB TR signals to support number of simultaneous users, therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made that the act of receiving and demodulating the received signals simultaneously corresponds to the claimed "selecting a received signal quality

measurement that satisfies the received signal quality criterion". The received signal quality criterion includes supporting number of simultaneous users.

Regarding claim 41, a person of average skill in the art would have recognized that the received signal quality measurement is a function of signal strength.

Regarding claims 42-43, in column 2, lines 15-55, Hoctor et al. teaches the use of different delays, each associated with a separate transmitter, determines a certain amount of multiple access capacity, e.g. supportable number of simultaneous users.

Regarding claim 59, claim 59 is rejected on the same ground as for claim 38 because of similar scope. Furthermore, Hoctor et al. UWB communications system includes a transmitter and receiver. The pairs of pulses generated for transmission are time-varied signals as appreciated by one of ordinary skill in the art. The use of different delays, each associated with a separate transmitter, determines a certain amount of multiple access capacity, e.g. supportable number of simultaneous users. Referring to figure 6, column 6, lines 25-40, the transmitter includes a pseudo-random timing generator 61 generating timing pulses, which are delayed first in delay 62 by time D1 and then in delay 63 by time D2. In light of the foregoing teachings, one of ordinary skill in the art would have recognized that pseudo-random timing generator 61 controls the generation of delays.

Regarding claim 61, Hoctor et al. teaches in column 2, lines 60-66, the use of more than two pulses to form the TR transmission, induces variation in the pulse repetition time to shape the transmitted spectrum, and transmission of pulses having designed frequency-domain characteristics.

Regarding claim 62, as recited in claim 59, the use of different delays, each associated with a separate transmitter, determines a certain amount of multiple access capacity, e.g. supportable number of simultaneous users. The delay, corresponding to the time-varying code, specifies the separation of pulses within a pulse repetition time, corresponding to the claimed time-varying code period.

Regarding claims 63-64, claims 63-64 are rejected on the same ground as for claim 59 because of similar scope.

Allowable Subject Matter

4. Claims 2, 6-10, 11-17, 53 and 54 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 11, the claim is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a method for transmitting and receiving a pulse train signal comprising "*the time delay*

results in a received signal quality measurement satisfying a received signal quality criterion, wherein the time delay is specified by at least one code element of at least one delay code wherein the at least one delay code is generated using at least one of a designed code generation technique, and a pseudorandom code generation technique". The closest prior art of record, Hoctor et al. (US 6,810,087 B2) disclosing ultra-wideband communications system, either singularly or in combination, fails to anticipate or render the above underlined limitations obvious.

5. Claims 20, 24-35 and 55-58 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 29, the claim is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose a method for transmitting and receiving a pulse train signal comprising "*the time delay results in a received signal quality measurement satisfying a received signal quality criterion, wherein the time delay is specified by at least one code element of at least one delay code wherein the at least one delay code is generated using at least one of a designed code generation technique, and a pseudorandom code generation technique*". The closest prior art of record, Hoctor et al. (US 6,810,087 B2) disclosing ultra-wideband communications system, either singularly or in combination, fails to anticipate or render the above underlined limitations obvious.

6. Claims 39, 48-52 and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Low et al. U.S. Patent 6,456,221 B2 discloses "Method And Apparatus For Signal Detection In Ultra Wide-Band Communications".

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khanh cong Tran 03/18/2005

KCT

Examiner KHANH TRAN